TVA Kingston Fossil Plant - Fugitive Dust Control & Suppression

Summary

The fly ash from the Kingston Fossil Plant in Harriman, TN is mostly inert but contains small amounts of heavy metals. The powdery fly ash is not harmful if touched, and breathing fly ash for a short period of time is unlikely to be a health concern. But, breathing particulates (fly ash or any other airborne particles) over long periods of time can irritate the respiratory system. TVA is taking measures to reduce the amount of airborne dust that may arise due to the recovery efforts associated with the work at the Kingston Fossil Plant. This document summarizes efforts to date and the current for long term actions. The plan may be altered to respond to changes in conditions at the site.

Short Term Dust Suppression

As part of the immediate actions to minimize dust and erosion, TVA implemented an immediate dust suppression plan. The following outlines this plan and Attachments 1 and 2 provide illustrations.

Ash Deposits

TVA spread grass seed, fertilizer, and straw over the centralized areas of displaced ash via an aerial, helicopter application. More than 85 tons of winter rye grass seed and 12-24-24 fertilizer were used, as well as 650 tons of straw were spread. These operations took place from January 3, 2009 through January 15, 2009. Winter rye requires a temperature of at least 50 degrees Fahrenheit for seven to ten days for germination to occur. A cold front moved in near the end of seeding operations, preventing the seed from properly germinating. TVA will further seed and fertilize if it becomes necessary. The straw that was spread has been successful in reducing fugitive dusting. The seed and straw is a temporary measure for controlling dust and erosion until final disposition of the ash is achieved.

The remaining, undisturbed portion of the ash dredge cell was covered with a vinyl acrylic emulsion blend liquid dust suppression agent. Approximately 1,650 gallons of agent were applied via a truck and sprayer. The agent was applied at the lower end of the recommended temperature range, reducing its effectiveness. The top layer flaked off of the ash when exposed to high winds. TVA proceeded to cover the area with straw to prevent fugitive dusting. Spraying of the liquid will continue as necessary to suppress dust.

The perimeter of the displaced ash was also treated with the liquid soil binding agent. The areas that were accessible from the road were treated via a truck and sprayer. TVA's Outreach Team worked with home owners to obtain access to these areas. In less accessible places, an amphibious vehicle towing a sled mounted sprayer was used. Approximately 2,300 gallons of agent were applied to these areas.

Roads

The on-site haul roads and the portions of the public roads that are used by construction equipment were sprayed daily by a series of water trucks. The paved surfaces of public roads were also cleaned by a sweeper/vacuum truck. The combination of the two methods cleaned debris from the roads and reduced dusting. This type of spraying will continue until an alternate construction road is completed, or where it remains necessary. The area around Swan Pond Road and Swan Pond Circle where work was on-going was and will continue to be sprayed with a water truck. This method of dust suppression was not used during freezing conditions.

Trucks and vehicles leaving the site that have the potential to track ash, mud, or dust were sprayed by a water truck prior to leaving. This has been very effective, but is labor intensive. (See below for long-term solution.)

Long Term Dust Suppression

As part of the long term actions to minimize dust and erosion, TVA is in the process of researching and implementing various types of equipment and products. The following outlines these items and Attachment 1 is a schematic that illustrates the method for each area.

Ash Deposits

For areas of ash that will remain undisturbed for longer periods of time, TVA plans to apply either the vinyl acrylic emulsion blend liquid dust suppression agent or erosion control mulch as needed. These will be applied using a truck mounted sprayer or a sled mounted sprayer towed by an amphibious vehicle. The mulch mixture requires no curing period and upon application forms a bond with the soil surface to create a continuous, erosion resistant layer. When weather conditions optimize, TVA will further seed and fertilize if it becomes necessary.

The remaining, undisturbed portion of the ash dredge cell is bordered by a stepped wall on the northern portion. TVA plans to excavate the stepped wall and construct a flatter (~3:1) slope of ash in its place. This slope will be treated with the erosion control mulch using a truck mounted sprayer.

Roads

TVA will continue to use a combination of water trucks and sweeper/vacuum trucks to minimize dusting on the roads.

To reduce fugitive dusting during freezing conditions, TVA has contracted with a company to spray a calcium chloride solution along all of the gravel covered roads that are being traveled by construction equipment. Calcium chloride is hygroscopic, meaning that it attracts moisture from the atmosphere and its

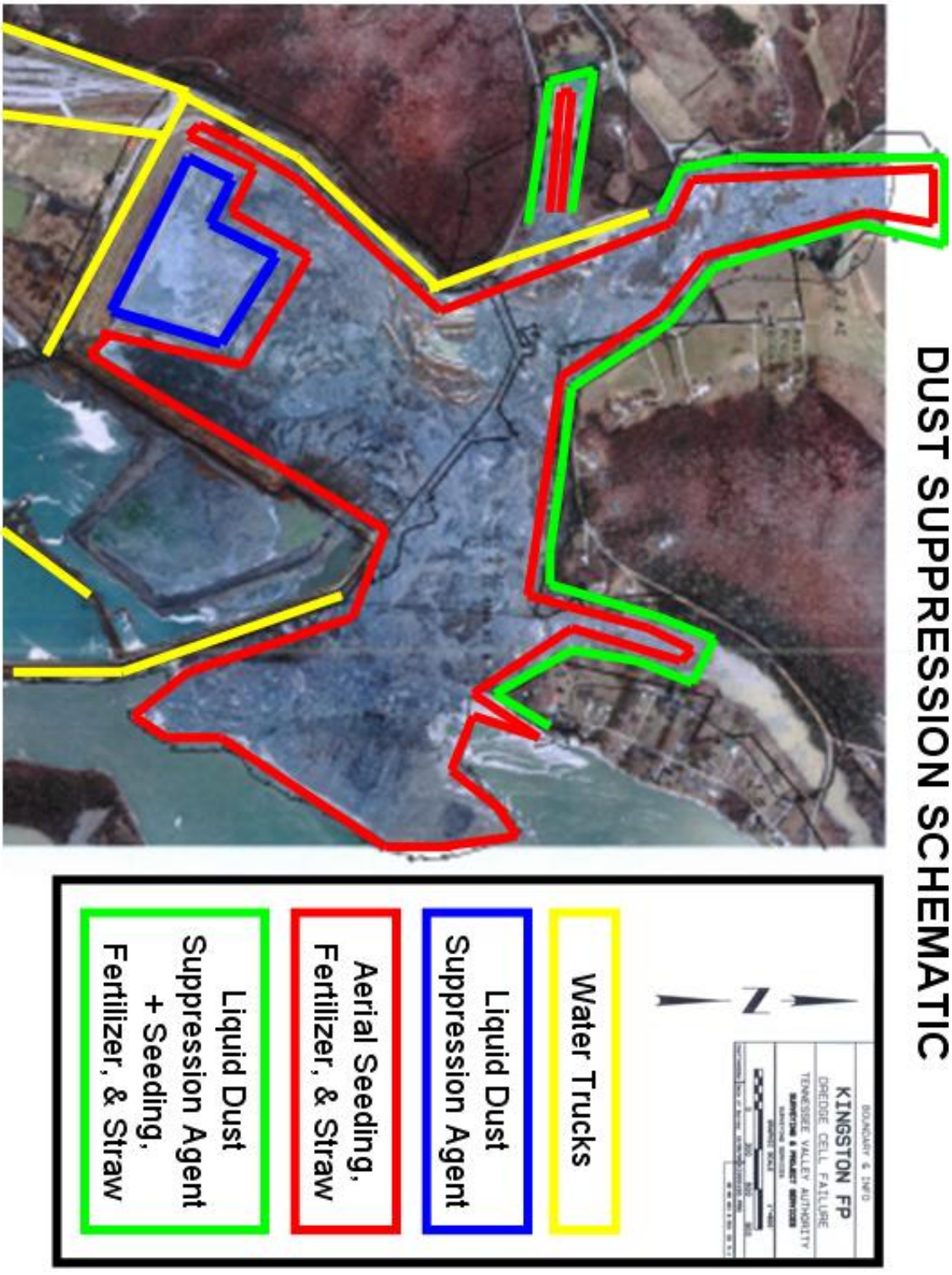
surroundings. This characteristic helps keep unpaved surfaces damp and reduce fugitive dusting.

Dust suppression agents capable of being applied in sub-freezing temperatures are currently being investigated for the on-site roads that are neither paved nor covered with crushed stone.

TVA has purchased and is in the process of installing three wheel-wash stations. These will be installed at strategic locations near the Kingston site, with input on the locations from TDEC and local officials.

For questions about dust or to report dusting conditions during business hours please contact TVA at 717-4006. After business hours, please call TVA at 632-2101.

Attachment 1 – Short Term Dust Suppression Schematic



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Attachment 2 – Site Photo from 1/25/09